

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.- 6. (canceled)

7. (previously presented) An imaging method comprising:

varying the focus of an imaging device while acquiring an image of an object, thereby blurring the image; and
deconvolving the blurred image to generate a representation of the object, varying the focus comprising applying signals to a piezoelectric focusing mechanism of the imaging device to generate oscillatory movement of the focusing mechanism.

8. (previously presented) An imaging method comprising:

varying the focus of an imaging device while acquiring an image of an object, thereby blurring the image; and
deconvolving the blurred image to generate a representation of the object, and varying the focus comprising launching a velocity-controlled focus change using the a stand-based focusing mechanism.

9. - 13. (canceled)

14. (previously presented) An imaging method comprising:

- (a) collecting an acquired image of an object using an imaging device;
- (b) varying the focus of the imaging device while collecting the acquired image, thereby blurring the acquired image;
- (c) determining a point spread function (PSF) associated with the imaging device;
- (d) determining an optical transfer function (OTF) using the PSF;
- (e) determining an object estimate;
- (f) convolving the object estimate with the PSF, using the OTF, to generate an estimated image;

- (g) comparing the estimated image with the acquired image to obtain a ratio;
- (h) convolving the ratio with a mirror image of the PSF, using a complex conjugate of the OTF, to form a convolved ratio;
- (i) multiplying the object estimate with the convolved ratio to form an updated object estimate; and
- (j) repeating steps (f) through (i) one or more times to generate a two dimensional projection image of three dimensions of the object from the updated object estimate, and collecting the acquired image comprising opening a shutter of the imaging device.

15. (original) The method of claim 14, varying the focus occurring while a shutter of the imaging device is open.

16. (previously presented) An imaging method comprising:

- (a) collecting an acquired image of an object using an imaging device;
- (b) varying the focus of the imaging device while collecting the acquired image, thereby blurring the acquired image;
- (c) determining a point spread function (PSF) associated with the imaging device;
- (d) determining an optical transfer function (OTF) using the PSF;
- (e) determining an object estimate;
- (f) convolving the object estimate with the PSF, using the OTF, to generate an estimated image;
- (g) comparing the estimated image with the acquired image to obtain a ratio;
- (h) convolving the ratio with a mirror image of the PSF, using a complex conjugate of the OTF, to form a convolved ratio;
- (i) multiplying the object estimate with the convolved ratio to form an updated object estimate; and
- (j) repeating steps (f) through (i) one or more times to generate a two dimensional projection image of three dimensions of the object from the updated object estimate, and varying the focus comprising varying an input voltage to a piezoelectric focusing mechanism of the imaging device.

17. (previously presented) An imaging method comprising:

- (a) collecting an acquired image of an object using an imaging device;
- (b) varying the focus of the imaging device while collecting the acquired image, thereby blurring the acquired image;
- (c) determining a point spread function (PSF) associated with the imaging device;
- (d) determining an optical transfer function (OTF) using the PSF;
- (e) determining an object estimate;
- (f) convolving the object estimate with the PSF, using the OTF, to generate an estimated image;
- (g) comparing the estimated image with the acquired image to obtain a ratio;
- (h) convolving the ratio with a mirror image of the PSF, using a complex conjugate of the OTF, to form a convolved ratio;
- (i) multiplying the object estimate with the convolved ratio to form an updated object estimate; and
- (j) repeating steps (f) through (i) one or more times to generate a two dimensional projection image of three dimensions of the object from the updated object estimate, and varying the focus comprising applying signals to a piezoelectric focusing mechanism of the imaging device to generate oscillatory movement of the focusing mechanism.

18. (previously presented) An imaging method comprising:

- (a) collecting an acquired image of an object using an imaging device;
- (b) varying the focus of the imaging device while collecting the acquired image, thereby blurring the acquired image;
- (c) determining a point spread function (PSF) associated with the imaging device;
- (d) determining an optical transfer function (OTF) using the PSF;
- (e) determining an object estimate;
- (f) convolving the object estimate with the PSF, using the OTF, to generate an estimated image;
- (g) comparing the estimated image with the acquired image to obtain a ratio;

- (h) convolving the ratio with a mirror image of the PSF, using a complex conjugate of the OTF, to form a convolved ratio;
- (i) multiplying the object estimate with the convolved ratio to form an updated object estimate; and
- (j) repeating steps (f) through (i) one or more times to generate a two dimensional projection image of three dimensions of the object from the updated object estimate, and varying the focus comprising launching a velocity-controlled focus change using the a stand-based focusing mechanism.

19. (previously presented) An imaging method comprising:

- (a) collecting an acquired image of an object using an imaging device;
- (b) varying the focus of the imaging device while collecting the acquired image, thereby blurring the acquired image;
- (c) determining a point spread function (PSF) associated with the imaging device;
- (d) determining an optical transfer function (OTF) using the PSF;
- (e) determining an object estimate;
- (f) convolving the object estimate with the PSF, using the OTF, to generate an estimated image;
- (g) comparing the estimated image with the acquired image to obtain a ratio;
- (h) convolving the ratio with a mirror image of the PSF, using a complex conjugate of the OTF, to form a convolved ratio;
- (i) multiplying the object estimate with the convolved ratio to form an updated object estimate; and
- (j) repeating steps (f) through (i) one or more times to generate a two dimensional projection image of three dimensions of the object from the updated object estimate, and acquiring the image being accomplished in two or more stages.

20. – 24. (cancelled)